

## WHAT IS CLAIMED IS:

1. A semiconductor laser device, which is made from an AlGaInP-based material, comprising:

a first clad layer of a first conductivity type, an active layer and a second clad layer of a second conductivity type that are formed over a semiconductor substrate,

wherein a portion of said active layer in an area near a laser resonator end face has a peak wavelength in photoluminescence that is smaller than a peak wavelength in photoluminescence in a portion of said active layer in a laser resonator inner area, and the second clad layer of the second conductivity type located in the area near a laser resonator end face contains As atoms.

2. The semiconductor laser device according to claim 1, wherein the As atom concentration of the second clad layer of the second conductivity type in the area near a laser resonator end face is higher than an As atom concentration of the second clad layer of the second conductivity type in the laser resonator inner area.

3. The semiconductor laser device according to claim 1 or 2, wherein the As atom concentration of the second clad layer of the second conductivity type in the area near a laser resonator end face is set in a range from not less than  $1 \times 10^{18} \text{cm}^{-3}$  to not more than  $1 \times 10^{20} \text{cm}^{-3}$ .

4. The semiconductor laser device according to any one of claims 1 to 3, wherein impurity atoms having the

second conductivity, contained in the second clad layer of the second conductivity type in the area near a laser resonator end face are the same as impurity atoms having the second conductivity contained in the second clad layer of the second conductivity type in the laser resonator inner area.

5. The semiconductor laser device according to claim 4, wherein the impurity atoms having the second conductivity, contained in the second clad layer of the second conductivity type in the area near a laser resonator end face and the laser resonator inner area, are II-group atoms that have a mass number smaller than the mass number of P atom.

6. The semiconductor laser device according to claim 5, wherein II-group atoms that have a mass number smaller than the mass number of P atom are Be atoms.

7. The semiconductor laser device according to any one of claims 4 to 6, wherein the impurity atoms having the second conductivity, contained in the second clad layer of the second conductivity type in the area near a laser resonator end face and the laser resonator inner area have a concentration in a range from not less than  $1 \times 10^{18} \text{cm}^{-3}$  to not more than  $5 \times 10^{18} \text{cm}^{-3}$ .

8. The semiconductor laser device according to any one of claims 1 to 7, wherein: a GaAs contact layer of the second conductivity type is formed over the second clad layer of the second conductivity type in the area near a laser resonator end face and the laser resonator inner area,

and a GaInP intermediate layer of the second conductivity type is formed between the second clad layer of the second conductivity type and the GaAs contact layer of the second conductivity type in the laser resonator inner area.

9. The semiconductor laser device according to any one of claims 1 to 8, wherein a GaAs current non-injection layer of the second conductivity type is formed over the second clad layer of the second conductivity type in the area near a laser resonator end face.

10. A manufacturing method of a semiconductor laser device, comprising the steps of:

allowing a laminated-layer structure that is made from an AlGaInP-based material and contains a first clad layer of a first conductivity type, an active layer and a second clad layer of a second conductivity type to grow over a semiconductor substrate;

diffusing As atoms in the second clad layer of the second conductivity type in an area near a laser resonator end face; and

diffusing impurity atoms having the second conductivity, contained in the second clad layer of the second conductivity type in the area near a laser resonator end face, into an active layer so that a portion of said active layer in the area near a laser resonator end face has a peak wavelength in photoluminescence that is smaller than a peak wavelength in photoluminescence in a portion of said active layer in the laser resonator inner area.

11. The manufacturing method of a semiconductor laser

device according to claim 10, wherein the step of diffusing As atoms in the second clad layer of the second conductivity type in the area near a laser resonator end face comprises the steps of: irradiating the area near a laser resonator end face of a wafer with ionized As atoms; and heating the wafer.

12. The manufacturing method of a semiconductor laser device according to claim 11, wherein the step of heating the wafer is compatibly carried out by a step of forming a current block layer of the first conductivity type.

13. The manufacturing method of a semiconductor laser device according to claim 11, wherein the step of heating the wafer is compatibly carried out by a step of forming a GaAs current non-injection layer of the first conductivity type over the second clad layer of the second conductivity type in the area near a laser resonator end face.

14. The manufacturing method of a semiconductor laser device according to claim 10, wherein the step of diffusing impurity atoms having the second conductivity type contained in the second clad layer of the second conductivity type in an area near a laser resonator end face of the wafer into an active layer so that a portion of said active layer in the area near a laser resonator end face has a peak wavelength in photoluminescence that is smaller than a peak wavelength in photoluminescence in a portion of said active layer in the laser resonator inner area is compatibly carried out by a step of forming a GaAs contact layer of the second conductivity type.

15. The manufacturing method of a semiconductor laser device according to claim 10 or 14, wherein the step of diffusing impurity atoms having the second conductivity type contained in the second clad layer of the second conductivity type in an area near a laser resonator end face of the wafer into an active layer so that a portion of said active layer in the area near a laser resonator end face has a peak wavelength in photoluminescence that is smaller than a peak wavelength in photoluminescence in a portion of said active layer in the laser resonator inner area is carried out by a molecular beam epitaxy (MBE) method.